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Education:

North Carolina State University, Raleigh, NC, attended from August 1995 to May 2000, Ph.D., May 2000.

University of Heidelberg, Germany, Heidelberg, Germany, attended from October 1994 to July 1995, , July 1995.

North Carolina State University, Raleigh, NC, attended from May 1991 to May 1994, B.S. physics, May 1994.

Work History:

LLNL, Livermore, Ca, physicist, from July 2001 to present.

Harvard University, Cambridge, Ma, Post. Doc., from May 2000 to May 2001.

Awards and Honors:

DNT recognition, 2005.

Publications:

Refereed Journal Articles:

Surabi Menon, Anthony D. DelGenio, Yoram Kauffman, Dorthy Koch, and Daniel Orlikowski, "Analyzing signatures of aerosol-cloud interactions with MODIS and GISS GCM", *J. Geophys. Res.,* **,** , (2006).

Orlikowski, D; Soderlind, P; Moriarty, JA, "First-principles thermoelasticity of transition metals at high pressure: Tantalum prototype in the quasiharmonic limit", *Phys. Rev. B,*

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Martin, LP; Orlikowski, D; Nguyen, JH, "Fabrication and characterization of graded impedance impactors for gas gun experiments from tape cast metal powders", *Mat. Sci. Eng. A-Struct.,* **427,** 83-91, (2006).

Nguyen, JH; Orlikowski, D; Streitz, FH; Moriarty, JA; Holmes, NC, "High-pressure tailored compression: Controlled thermodynamic paths", *J. Appl. Phys.,* **100,** 023508, (2006).

Moriarty, JA; Benedict, LX; Glosli, JN; Hood, RQ; Orlikowski, DA; Patel, MV; Soderlind, P; Streitz, FH; Tang, MJ; Yang, LH, "Robust quantum-based interatomic potentials for multiscale modeling in transition metals", *J. Mater. Res.,* **21,** 563-573, (2006).

Farber, DL; Krisch, M; Antonangeli, D; Beraud, A; Badro, J; Occelli, F; Orlikowski, D, "Lattice dynamics of molybdenum at high pressure", *Phys. Rev. Lett.,* **96,** 115502, (2006).

Lu G, Orlikowski D, Park I, Politano O, Kaxiras E, "Energetics of hydrogen impurities in aluminum and their effect on mechanical properties", *Phys. Rev. B,* **65,** 064102, (2002).

Orlikowski D, Mehrez H, Taylor J, Guo H, Wang J, Roland C, "Resonant transmission through finite-sized carbon nanotubes", *Phys. Rev. B,* **63,** 155412, (2001).

Orlikowski D, Sagui C, Somoza AM, Roland C, "Two- and three-dimensional simulations of the phase separation of elastically coherent binary alloys subject to external stresses", *Phys. Rev. B,* **62,** 3160-3168, (2000).

Nardelli MB, Fattebert JL, Orlikowski D, Roland C, Zhao Q, Bernholc, "Mechanical properties, defects and electronic behavior of carbon nanotubes", *Carbon,* **38,** 1703-1711, (2000).

Orlikowski D, Nardelli MB, Bernholc J, Roland C, "Theoretical STM signatures and transport properties of native defects in carbon nanotubes", *Phys. Rev. B,* **61,** 14194-14203, (2000).

Orlikowski D, Nardelli MB, Bernholc J, Roland C, "Ad-dimers on strained carbon nanotubes: A new route for quantum dot formation?", *Phys. Rev. Lett.,* **83,** 4132-4135, (1999).

Orlikowski D, Sagui C, Somoza A, Roland C, "Large-scale simulations of phase separation of elastically coherent binary alloy systems", *Phys. Rev. B,* **59,** 8646-8659, (1999).

C. Sagui, D. Orlikowski, A. Somoza, and C. Roland, "Three-dimensional simulations of

Ostwald ripening with elastic effects", *Phys. Rev. E,* **58,** R4092-R4095, (1998).

Lawrence Livermore National Laboratory Reports:

F. H. Streitz, J. H. Nguyen, D. Orlikowski, R. Minich, J. A. Moriarty, N. C. Holmes, "Rapid Resolidification of Metals using Dynamic Compression, Final report 02-ERD-033", UCRL-UCRL-TR-209674 (2005).

D. Orlikowski, "A simple, low pressure stength model for U-6wt.%Nb", UCRL-JRNL-155643 (2003).

Books:

Published Conference Proceedings:

Daniel Orlikowski, Per Soderlind, John A. Moriarty, "Shear modeling: thermoeleasticity at high temperature and pressure for tantalum", Plasticity 2005 (Kauai, HI, January 2005), *Int. J. Plasticity,* **,** pp (2006).

J. A. Moriarty, L. X. Benedict, J. N. Glosli, R. Q. Hood, D. A. Orlikowski, M. V. Patel, P. Soderlind, F. H. Streitz, M. Tang and L. H. Yang, "Quantum-Based Atomistic Simulation of Transition Metals", SHOCK05, 14th APS Topical Conference on Shock Compression of Condensed Matter (Baltimore, MD, July 2005), *AIP Conf. Proc.,* **845,** pp 403-408 (2006).

H. Jarmakani, J. M. Mc Naney, M. S. Schneider, D. Orlikowski, J. H. Nguyen, B. Kad, and M. A. Meyers
, "Dynamic Response of Copper Subjected to Quasi-Isentropic, Gas-Gun Driven Loading ", SHOCK05, 14th APS Topical Conference on Shock Compression of Condensed Matter (Baltimore, MD, July 2005), *AIP Conf. Proc.,* **845,** pp 1319-1322 (2006).

John A. Moriarty, Lorin X. Benedict, James N. Glosli, Randolph Q. Hood, Daniel A. Orlikowski, Mehul V. Patel, Per Soderlind, Frederick H. Streitz, Meijie Tang, and Lin H. Yang, "Robust Quantum-Based Interatomic Potentials for Multiscale Modeling in Transition Metals", 2005 MRS Spring Meeting, Symposium EE Linking Length Scales in the Mechanical Behavior of Materials (San Francisco, CA, March 2005), *Mater. Res. Soc. Symp. Proc.,* **882E,** pp EE4.7 (2005).

Daniel Orlikowski, Per Soderlind and John A. Moriarty, "Thermoelasticity at High Temperatures and Pressures for Ta", MMM-II, Second International Conference on Multiscale Materials Modeling (Los Angeles, CA, October 2004), *Conference Proceedings of Multiscale Materials Modeling II,* **na,** pp 112 (2004).

Jeffrey H. Nguyen, Daniel Orlikowski, Frederick H. Streitz, John A. Moriarty, Neil C. Holmes, "Specifically Prescribed Dynamic Thermodynamic Paths and Resolidification Experiments", 13th APS Topical Conference on Shock Compression of Condensed

Matter (Portland, OR, July 2003), *AIP Conf. Proc.,* **706,** pp 1225-1230 (2004).

D. Orlikowski, C. Sagui, A. Somoza, and C. Roland, "Three-Dimensional Simulations of Phase Separtations in Model Binary Alloy Systems with Elasticity", (, 1998), *Mat. Res. Soc. Symp. Proc.,* **481,** pp 255 (1998).

News Related Articles:

Arnie Heller, "New Routes to High Temperature and Pressures", *Science and Technology Review,* March 2007, p 23.

Jeffrey H. Nguyen, Daniel Orlikowski, Frederick H. Streitz, John A. Moriarty, and Neil C. Holmes, "High-pressure tailored compression: Controlled thermodynamic paths", *Virtual Journal of Nanoscale Science & Technology,* July 31, 2006, p .

Anne M. Stark, " Researchers measure high-pressure
lattice dynamics of molybdenum
NR-06-03-11
", *LLNL public affairs news release,* March 24, 2006, p NR-06-03-11.

Presentations:

Other Presentations:

"A multi-scale, atomistic-based strength model for
tantalum", oral presentation, International Symposium on Plasticity 2006, Halifax, Nova Scotia, July 2006.

"Recent Advances in Tailored Dynamic Compression", oral presentation, American Physical Society, Baltimore, MD, United States, March 2006.

"Dynamic Response of Copper Subjected to Quasi-Isentropic, Gas-Gun Driven Loading", oral presentation, 14th APS Topical Conference on Shock Compression of Condensed Matter, Baltimore, MD, United States, August 2005.

"Off-Hugoniot Compression of Tantalum to Megabar Pressures", oral presentation, APS Shock Compression of Condensed Matter, Baltimore, MD, United States, August 2005.

"A pressure-induced phase-transition from liquid to solid in Water", oral presentation, APS Shock Compression of Condensed Matter:, Baltimore, MD, August 2005.

"Thermoelasticity at High Temperatures and Pressures: Molybdenum and Tantalum", oral presentation, AIRAPT, Karlruhe, Germany, June 2005.

"High-pressure liquid-solid phase transition and meltline for Water", oral presentation,

AIRAPT:, Karlsruhe, Germany, June 2005.

"tailored dynamic thermodynamic paths: implications for phase transitions and planetary isentropes", oral presentation, AIRAPT, Karlruhe, Germany, June 2005.

Professional Leadership and Service:

Conferences/Workshops Organized:

14th APS Topical Conference on Shock Compression of Condensed Matter, Baltimore, MD, August 2005, Session Chair.

Appointment to Editorial and Referee Roles:

Phys. Rev. Lett., Reviewer or Referee, from 2006 to present.

High Pressure Res., Reviewer or Referee, from 2004 to present.

AIP Conf. Proc. Vol 845, Shock Compression of Condensed Matter, Reviewer or Referee, from 2003 to 2006.

Patents and Copyrights Issued:

"Functionally formed composite with arbitrary prescribed density profile", Jeffery H. Nguyen
Daniel Orlikowski
Frederick H. Streitz
Eamon Loughane
Jeffrey van Lue, Patent , 2003.